

MAYFLIES, OR EPHEMEROPTERA, OF WEST VIRGINIA WITH EMPHASIS ON THE NYMPHAL STAGE¹

Gerald M. Faulkner², Donald C. Tarter³

ABSTRACT: This investigation represents the first detailed study of the Ephemeroptera of West Virginia. Twelve families are represented including 24 genera and 106 species. Sixty-nine state records and 508 county records were ascertained.

DESCRIPTORS: Mayflies, Ephemeroptera, Taxonomy, Distribution, State and County Records

The study of mayflies in West Virginia has been neglected. Prior to this investigation, 37 species have been recorded for this state (Needham et al., 1935; Burks, 1953; Berner, 1956; Maxwell and Benson, 1963; McDiffett, 1964; Wilburn, 1964; Olson, 1971; Burrows, 1971; Tarter, 1972; Menendez, 1974; and Lewis, 1974). Statewide distribution patterns of mayflies were presented by Faulkner (1974).

Following this investigation, the state list of mayflies now comprises 106 species. Sixty-nine state records and 508 county records were noted. County records are given after each species and the asterisk denotes a state record.

Family Siphonuridae

Ameletus lineatus Traver: Mingo, Wayne (Tarter, 1972)

A. ludens Needham: Marion (Needham et al., 1935), Randolph (Menendez, 1974), Tucker (Menendez, 1974)

Siphonurus marshalli Traver*: Putnam

Isonymchia albomanicata Needham*: Hardy (CU) (Adults and Nymphs)

I. sadleri Traver*: Randolph (1 Male)

Family Baetidae

Baetis cingulatus McDunnough*: Mercer (USDI), Wetzel

B. flavistriga McDunnough*: Putnam

B. frondalis McDunnough*: Jackson

B. intercalaris McDunnough*: Fayette, Jackson, Kanawha, Nicholas (USDI), Summers (USDI), Wyoming (USDI)

B. levitans McDunnough*: Lincoln

B. phoebus McDunnough*: Mercer

B. phyllis Burks*: Kanawha, Logan (USDI)

B. propinquus (Walsh)*: Hardy (USNM)

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² 17 Steiner Blvd., Huntington, WV

³ Depart. of Biol. Sci., Marshall Univ., Huntington, WV

- B. rusticans* McDunnough*: Fayette, Jackson, Kanawha, Mercer, Monroe, Nicholas (DNR), Putnam, Webster (DNR)
B. vagans McDunnough*: Marginal counties only: Logan, Mercer, Randolph, Tyler
Callibaetis fluctuans (Walsh)*: Cabell
Centroptilum rivulare Traver*: Summers (DNR)
Cloeon vicinum (Hagen): No county record, Male (Burks, 1953)
Pseudocloeon carolina Banks*: Berkeley (USNM)
P. cingulatum McDunnough*: Pocahontas
P. dubium (Walsh)*: Calhoun, Fayette, Lewis (USDI), Mason, Pleasants, Pocahontas (DNR), Putnam, Webster (DNR), Wirt
P. myrsum Burks*: Nicholas (USDI), Pocahontas (DNR), Putnam, Randolph (USDI), Tucker (USDI), Webster (DNR)
P. parvulum McDunnough*: Marginal counties only: Jefferson, Mercer (USDI), Tucker (USDI), Wayne
P. punctiventris (McDunnough): Calhoun, Jackson, Marion (USDI), McDowell (USDI), Tyler, Wayne (Tarter, 1972)

Family Heptageniidae

- Epeorus dispar* (Traver)*: Kanawha, Pendleton
E. fragilis (Morgan): Preston (Adult) (Maxwell and Benson, 1963)
E. humeralis (Morgan)*: Randolph (2 males)
E. pluralis (Banks): Preston (Adult) (Maxwell and Benson, 1963)
E. rubidus (Traver)*: Berkeley (USNM) (Adult)
Heptagenia aphrodite McDunnough: Fayette, Marion (Needham et al., 1935), Mercer (USDI), Pendleton (Needham et al., 1935)
H. diabasia Burks*: Braxton, Fayette, Kanawha, Lincoln, Logan, Randolph, Wyoming (USDI)
H. flavescens Walsh*: Fayette, Logan, Pocahontas (DNR), Tucker (USDI)
H. hebe McDunnough*: Hardy (CU) (Adult)
H. julia Traver*: Grant (CU) (Adult)
H. juno McDunnough*: Boone, Lincoln, Mason, Putnam, Tucker
H. lucidipennis (Clemens)*: Putnam
H. maculipennis Walsh*: Berkeley, Nicholas, Pocahontas (USDI), Webster (DNR)
H. marginalis Banks: Grant (CU), Marion (Needham et al., 1935), Pendleton, Pocahontas (Needham et al., 1935), Raleigh (CU)
H. perfida McDunnough*: Pleasants, Putnam, Tyler, Wirt, Wood
Stenonema bipunctatum (McDunnough)*: Mercer
S. carolina (Banks): Hardy (Lewis, 1974; 1 male, 3 females), Jackson, Nicholas, Webster
S. femoratum (Say)*: Calhoun (USDI), Kanawha (USDI), Lewis (USDI), Putnam
S. gildersleevi Traver*: Mercer
S. integrum (McDunnough)*: Cabell (USDI), Grant (CU), Kanawha (USDI), Nicholas (DNR), Pocahontas (CU)
S. interpunctatum (Say): Marginal counties only: Hampshire, Hancock, Mercer, Wayne, (Grant; Lewis, 1974)
S. ithaca (Clemens and Leonard): Monroe, Nicholas, Pendleton (Needham et al., 1935), Randolph (USDI)
S. pudicum (Hagen): Preston (Wilburn, 1964), (Adult)
S. pulchellum (Walsh)*: Fayette, Mercer, Nicholas
S. rubromaculatum (Clemens)*: Marginal counties only: Hancock, Mason, Mercer, Randolph

- S. rubrum* (McDunnough)*: Marginal counties only: Berkeley, Lincoln, Monroe, Tucker
S. tripunctatum (Banks): Marginal counties only: Marshall, McDowell (USDI), Monongalia (USDI), Wayne (Tarter, 1972)
S. vicarium (Walker) Marginal counties only: Berkeley, Hancock, Mercer, Wayne (Randolph; Lewis, 1974)

Family Leptophlebiidae

- Habrophlebia vibrans* Needham: Pocahontas (Burrows, 1971)
Leptophlebia cupida (Say)*: Wayne
Paraleptophlebia adoptiva (McDunnough)*: Mercer, Nicholas, Pocahontas (DNR), Randolph (DNR), Summers, Webster
P. debilis (Walker): Preston (Wilburn, 1964), Randolph (2 males)
P. guttata (McDunnough): Grant (CU), Hardy (Needham et al., 1935), Pendleton (Needham et al., 1935), Pocahontas (Needham et al., 1935), Preston (Wilburn, 1964)
P. mollis (Eaton)*: Marginal counties only: Fayette, Logan, Pendleton, Wetzel
P. ontario (McDunnough)*: Mercer, Pleasants, Pocahontas (DNR), Randolph, Tyler, Webster (DNR), Wirt, Wood
P. praepedita (Eaton)*: Mercer, Randolph
P. volitans (McDunnough)*: No county record (CU)

Family Ephemerellidae

- Ephemerella aestiva* McDunnough*: Logan, Pleasants, Pocahontas, Raleigh, Randolph (DNR), Tyler, Wirt, Wood
E. allegheniensis Traver: Mineral (Needham et al., 1935)
E. argo Burks*: Logan, Mingo
E. bicolor Clemens*: Clay
E. catawba Traver*: Kanawha
E. cornuta Morgan: Marginal counties only: Fayette, Logan, Pendleton, Preston (Wilburn, 1964)
E. cornutella McDunnough: Monongalia (McDiffett, 1964), Pendleton, Randolph (USDI), Tucker (USDI), Webster (DNR)
E. coxalis McDunnough*: Cabell, Putnam
E. deficiens Morgan: Marginal counties only: Mercer, Mingo, Preston, Hardy (Needham et al., 1935)
E. dorothea Needham: Marginal counties only: Hardy (Needham et al., 1935), Logan, Mercer, Randolph (USDI)
E. excrucians Walsh*: Randolph (USDI)
E. frisoni McDunnough*: Pocahontas, Tucker
E. funeralis McDunnough*: Marginal counties only: Cabell, Grant, Mingo, Pendleton
E. invaria (Walker): Monongalia (McDiffett, 1964), Nicholas
E. lata Morgan*: Pocahontas (USDI), Randolph (DNR), Webster (DNR)
E. minimella McDunnough*: Marginal counties only: Brooke, Lincoln, Pendleton, Summers
E. needhami McDunnough*: Hancock, Pocahontas (USDI), Putnam, Randolph (USDI), Ritchie (USDI), Webster (DNR)
E. rotunda Morgan*: Marginal counties only: Lewis, Monroe, Pendleton, Putnam
E. serrata Morgan: Hardy (Needham et al., 1935)
E. serratoides McDunnough: Boone, Grant (CU), Hardy (Needham et al., 1935), Mineral (Needham et al., 1935), Pendleton, Randolph, Summers (CU)

- E. simplex* McDunnough*: Barbour (USDI), Randolph (USDI)
E. subvaria McDunnough*: Pocahontas (DNR), Randolph (DNR), Webster
E. temporalis McDunnough*: Putnam, Randolph, Tucker, Wayne
E. walkeri Eaton*: Randolph (USDI), Tucker (USDI)

Family Tricorythidae

- Tricorythodes explicatus* Eaton*: Hardy (CU) (Adult)
T. stygiatus McDunnough*: Hardy (CU) (Adult)

Family Caenidae

- Caenis amica* Hagen: No county record (Burks, 1953) (Adult)
C. diminuta Walker*: Jackson (CU) (Adult)
C. hilaris (Say)* (Adults): Hardy (CU), Mingo (CU), Pocahontas (CU)
C. jocosa McDunnough*: Randolph (6 males)

Family Neophemeridae

- Neophemera purpurea* (Traver): Mineral (Berner, 1956)

Family Baetiscidae

- Baetisca bajkovi* Neave: Marginal counties only: Lewis, Lincoln (USDI), Pleasants, Wayne (Olson, 1971)
B. callosa Traver: Marginal counties only: Berkeley (USDI), Greenbrier, Preston (Needham et al., 1935)
B. carolina Traver: Monongalia (Needham et al., 1935)

Family Potamanthidae

- Potamanthus distinctus* Traver: Grant (Needham et al., 1935), Mingo (Needham et al., 1935) (Adult)
P. neglectus Traver*: No county record (CU) (Adult)

Family Ephemeridae

- Ephemera guttulata* Pictet: Marginal counties only: Berkeley, Mingo, Preston (USDI), Wayne (Tarter, 1972)
E. simulans Walker*: Brooke, Greenbrier, Logan, Randolph, Webster
E. triplex Needham (All Adult Records): Fayette (CU), Hardy (Needham et al., 1935), Marion (Needham et al., 1935), Monongalia (CU), Pocahontas (Needham et al., 1935)
E. varia Eaton: Marginal counties only: Hampshire (CM), Hancock, Lincoln, Monroe, (Randolph; Needham et al., 1935)
Hexagenia atrocaudata McDunnough: Grant (Needham et al., 1935), Mercer (Needham et al., 1935), Pendleton (Needham et al., 1935), Pocahontas (CU)
H. limbata (Serville): Fayette (USDI), Jackson (Needham et al., 1935), Kanawha (USDI), Lewis (USDI), Randolph, Tucker, Wayne
H. munda Eaton*: Wayne (1 male, 2 females)
Litobrancha recurvata (Morgan): Grant (Needham et al., 1935), Mineral (CU), Nicholas, Pocahontas

Family Polymitarcidae

Ephoron leukon Williamson*: Marginal counties only: Cabell (USDI), Lewis (USDI), Mineral (CU), Monroe (USDI)

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